In conclusion, both biochemical screening for and treatment of thyroid dysfunction in newborns, infants, and children with Down syndrome require further study. In the meantime, monitoring of height and weight should enable detection of overt hypothyroidism and, until the results of the Dutch study are extended and replicated, clinicians should refrain from treating on the basis of isolated elevations of TSH, at least after age 2 to 3 years, when there is no evidence that this has a negative impact on brain development.

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A randomized trial of primary care provider prompting to enhance preventive asthma therapy

Halterman JS, McConnochie KM, Conn KM, Yoos HL, Callahan PM, Neely TL, et al. Arch Pediatr Adolesc Med 2005;159:422-7

Context Urban children often receive inadequate therapy for asthma. One reason may be that primary care providers are unaware of the severity of their patients' symptoms.

Objective To determine whether systematic school-based asthma screening, coupled with primary care provider notification of asthma severity, will prompt providers to prescribe a new preventive medication or modify a current dose.

Design Randomized controlled trial.

Setting Rochester, New York.

Participants Children age 3 to 7 years with mild persistent to severe persistent asthma.

Interventions Children were assigned randomly to a provider notification group (child's primary care provider notified of asthma severity) or a control group (provider not notified of asthma severity). Primary care providers of children in the intervention group were sent a facsimile indicating the child's symptoms and recommending medication action based on national criteria. Interviewers blinded to the child's group assignment called parents 3 to 6 months later to determine whether preventive actions had been taken.

Main Outcome Measures Number of children who received a preventive medication action.

Results Of 164 eligible children, 151 (92.1%) were enrolled. Children in the provider notification group were not more likely to receive a preventive medication action than were children in the control group (21.9% vs 26.0%; $P = .57$). Additional preventive measures, including encouraging compliance with medications (33.3% vs 31.3%; $P = .85$), recommending environmental modifications (39.3% vs 42.4%; $P = .86$), and making referrals for specialty care (6.6% vs 6.0%; $P = .99$), also did not differ between the provider notification and control groups. At the end of the study, 52.4% of children in both groups with no medication changes were still experiencing persistent symptoms.

Conclusions School-based asthma screening identified many symptomatic children in need of medication modification. Provider notification did not improve preventive care, however. The findings suggest that more powerful interventions are needed to make systematic asthma screening effective.

Comment There is a gap between the asthma symptoms reported by families and appropriate physician treatment.[1] School-based screenings can potentially be an efficient method to monitor symptoms of those children known to have asthma, as well as to identify new cases. This study suggests that feedback from a school-based screening delivered by facsimile is unlikely to prompt physicians to prescribe an asthma-control medication. Research suggests that when delivering feedback, the timing of the receipt of information (the facsimile) in relation to the intended action (initiating or changing a medication regimen) is associated with the success of the intervention.[2] The physicians received the facsimile when the patients were not present in the office, and they may have preferred to initiate treatment with a patient present.

In addition, there are many barriers to prescribing daily medications for persistent asthma, including physicians' unfamiliarity with the guidelines, concerns about adverse effects, and physicians' beliefs that families may not adhere to such medication regimens.[3] Although the results were negative, this study suggests that combinations of interventions may be needed to address issues with prescription of appropriate medications to treat asthma.

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Follow-up testing among children with elevated screening blood lead levels

Kemper AR, Cohn LM, Fant KE, Dombkowski KJ, Hudson SR. JAMA 2005;293:2232-7

Context Follow-up testing after an abnormal screening blood lead level is a key component in lead poisoning prevention.

Objectives To measure the proportion of children with elevated screening lead levels who have had follow-up testing and to determine the factors associated with such care.

Design Retrospective, observational cohort study.

Participants 3682 Michigan Medicaid-enrolled children age 6 years or younger who had a screening blood lead level of at least 10 μg/dL (0.48 μmol/L) between January 1, 2002, and June 30, 2003.

Main Outcome Measure Testing within 180 days of an elevated screening lead level.

Results Follow-up testing was received by 53.9% (95% confidence interval [CI], 52.2% to 55.5%) of the children. In multivariate analysis adjusting for age, screening blood lead level results, and local health department catchment area, the relative risk of follow-up testing was lower for Hispanic and other nonwhite children than for white children (0.91; 95% CI, 0.87 to 0.94), for children living in urban areas than in those living in rural areas (0.92; 95% CI, 0.89 to 0.96), and for children living in high–lead risk areas than in those living in low–lead risk areas (0.94; 95% CI, 0.92 to 0.96). Among children who did not have follow-up testing, 58.6% (95% CI, 56.3% to 61.0%) had at least 1 medical encounter in the 6-month period after the elevated screening blood lead level, including encounters for evaluation and management (39.3%; 95% CI, 36.9% to 41.6%) or preventive care (13.2%; 95% CI, 11.6% to 14.8%).

Conclusions The rate of follow-up testing after an abnormal screening blood lead level was low, and those children at increased risk for lead poisoning were less likely to receive follow-up testing. At least half of the children had a missed opportunity for follow-up testing. The observed disparities of care may increase the burden of cognitive impairment among at-risk children.

Comment There is currently little information about the follow-up testing that children receive after they are identified as having lead toxicity. In this well-designed retrospective cohort, Kemper et al demonstrated that 46% of the children who had elevated blood lead levels (≥10 μg/dL) did not receive appropriate follow-up testing. Moreover, the children at greatest risk for lead poisoning—nonwhite children, children living in urban areas/areas with high risk of exposure, and children living in areas with the greatest prevalence of elevated screening blood lead levels—were the least likely to receive follow-up testing. Whereas the use of a Michigan Medicaid database may limit the generalizability of the results to children from other states and other insurance carriers, the results are likely to reflect typical scenarios among those children at highest risk for lead toxicity.

This study highlights other deficiencies of our health system. By the time a child is identified as having an elevated blood lead level using the CDC criteria (≥10 μg/dL), he or she has already been exposed to levels associated with adverse neurodevelopmental effects.[1,2] Although it is inappropriate to wait until a child is unduly exposed, this study suggests that too often we fail even in secondary prevention efforts. A shift toward the primary prevention of childhood lead poisoning by screening high-risk, older housing and reducing allowable levels of lead in house dust, soil, and water is long overdue.

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Screening for children's exposure to environmental tobacco smoke in a pediatric primary care setting

Groner JA, Hoshaw-Woodard S, Koren G, Klein J, Castile R. Arch Pediatr Adolesc Med 2005;159:450-5

Context The American Academy of Pediatrics has recommended that pediatricians assess their patients' environmental tobacco smoke (ETS) exposure, but the specific questions most likely to identify children with high ETS exposure are not known. Cotinine, a nicotine metabolite present in hair, can be used to quantify months of ETS exposure.

Objective To develop a brief screening tool that will accurately predict ETS exposure as defined by a child's hair cotinine level.

Setting Columbus Children's Hospital Primary Care Center.

Participants A convenience sample of healthy children age 2 weeks to 3 years of both self-reported smokers and nonsmokers.

Interventions Screening questions regarding home ETS exposure.

Main Outcome Measure Performance of the screening questions compared with child hair cotinine levels.

Results Hair samples and questionnaire data were obtained from 291 children. Based on clinical applicability and statistical significance, 3 questions ("Does the mother smoke?," "Do others smoke?," and "Do others smoke inside?") were selected as a valid screening tool to determine children's ETS exposure risk. Maternal reports of smoking outside only or smoking only a few cigarettes per day had no impact on child hair cotinine levels.

Conclusions It was possible to derive a simple, specific, and valid screening tool that can be used in pediatric offices to identify children at risk for ETS exposure. Further research is needed to test this tool prospectively.